ABSTRACT

Sequences of items may be maintained using ordered locks. These items may correspond to anything, but using ordered locks to maintain sequences of packets may be particularly useful. One implementation uses a locking request, acceptance, and release protocol. One implementation associates instructions with locking requests such that when a lock is acquired, the locking mechanism executes or causes to be executed the associated instructions as an acceptance request of the lock is implied by the association of instructions (or may be explicitly requested). In some applications, the ordering of the entire sequence of packets is not required to be preserved, but rather only among certain sub-sequences of the entire sequence of items, which can be accomplished by converting an initial root ordered lock (maintaining the sequence of the entire stream of items) to various other locks (each maintaining a sequence of different sub-streams of items).